

### REMARKS

In reply to the Office Action of December 1, 2008, Applicant submits the following remarks. Claims 1, 14, 20 and 25 have been amended. The claims now require that the metal layer consists essentially of tantalum or zirconium. Claim 14 is amended to correct dependency and claim 25 is amended to correct a typographical error. Claims 43-45 are new and are supported at least by FIG. 2 and paragraph 14 of the specification as filed. Applicant respectfully requests reconsideration in view of the foregoing amendments and these remarks.

#### Section 103 Rejections

Claims 1-6, 8-9, 11-12, 14-17, 20-22, 24-32, 34-42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Auch in view of U.S. Patent No. 5,920,080 ("Jones").

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Auch in view of U.S. Patent No. 6,215,245 ("Mori").

Applicant respectfully disagrees with the rejections in light of the requirement in each of the pending claims that the metal layer consists essentially of tantalum or zirconium and is capable of absorbing water and oxygen.

As pointed out in the rejection, "Auch fail to disclose wherein the metal layer consists essentially of tantalum or zirconium." (page 7). Jones is relied up to show conducting lines. Thus, Auch and Jones are not addressed here.

Mori describes a protective film for a cathode (col. 5, lines 28-39). The protective layer comprises at least one of *the oxide, nitride or carbide of the constituting material for the cathode*. Reactive sputtering is used to form the cathode and the protective film. The raw material for the protective layer usually has the same composition as that of the cathode material. Thus, it is possible to form the protective film continuously from the same material as the cathode material. The cathode can be formed of sodium and/or potassium and a less reactive metal (col. 3, lines 18-52).

The oxygen content of the oxide, the nitrogen content of the nitride and the carbon content of the carbide can deviate more or less from the stoichiometric composition or can be 0.5

to 2 times as large as the stiochiometric composition (col. 5, lines 40-44). The same material as the cathode material is used for the target to form the protective layer (col. 5, lines 45-51). Oxygen gas or CO is used as the reactive gas for oxide formation, nitrogen gas, NH<sub>3</sub>, NO, NO<sub>2</sub>, or N<sub>2</sub>O are used for nitride formation and CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, or C<sub>2</sub>H<sub>2</sub> are used as the reactive gas for carbide formation.

Applicant believes that the issue presented by the rejection here is the term "consists essentially of". If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). (MPEP 2111.03)

Mori teaches a protective layer formed of an oxide, nitride or carbide. While the raw material, i.e., the sputtering target, used to form the cathode is the same as the raw material used to form the protective layer, the protective layer resulting from the reactive sputtering is an oxide, nitride or carbide layer.

A protective layer formed of an oxide, nitride or carbide does not have the capability of absorbing water and oxygen of a metal layer that consists essentially of tantalum or zirconium. As noted by the applicant's specification, "It has been found that alkaline earth metals are constantly reactive, which prevents the formation of mechanically stable oxide films on the surface that may inhibit further sorption." (paragraph 21). Mori requires the protective layer to be an oxide, nitride or carbide. Thus, Mori fails to suggest or disclose a metal layer that consists essentially of tantalum or zirconium. There is no *prima facie* case of obviousness with respect to the pending claims.

#### New Claims

New claims 42-45 have been added to describe electrodes that are in direct contact with the metal layer. The new claims depend from the claims discussed above and thus there is no *prima facie* case of obviousness with respect to the new claims.


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The fees for the excess claims in the amount of \$156 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050, referencing docket no. 12406-0095002.

Respectfully submitted,

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